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## **Selected Acquisition Report (SAR)**

RCS: DD-A&T(Q&A)823-260



### **Guided Multiple Launch Rocket System/Guided Multiple Launch Rocket System Alternative Warhead (GMLRS/GMLRS AW)**

As of FY 2019 President's Budget

Defense Acquisition Management  
Information Retrieval  
(DAMIR)

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## **Sensitivity Originator**

No originator info Available at this time.

## Common Acronyms and Abbreviations for MDAP Programs

Acq O&M - Acquisition-Related Operations and Maintenance  
ACAT - Acquisition Category  
ADM - Acquisition Decision Memorandum  
APB - Acquisition Program Baseline  
APPN - Appropriation  
APUC - Average Procurement Unit Cost  
\$B - Billions of Dollars  
BA - Budget Authority/Budget Activity  
Blk - Block  
BY - Base Year  
CAPE - Cost Assessment and Program Evaluation  
CARD - Cost Analysis Requirements Description  
CDD - Capability Development Document  
CLIN - Contract Line Item Number  
CPD - Capability Production Document  
CY - Calendar Year  
DAB - Defense Acquisition Board  
DAE - Defense Acquisition Executive  
DAMIR - Defense Acquisition Management Information Retrieval  
DoD - Department of Defense  
DSN - Defense Switched Network  
EMD - Engineering and Manufacturing Development  
EVM - Earned Value Management  
FOC - Full Operational Capability  
FMS - Foreign Military Sales  
FRP - Full Rate Production  
FY - Fiscal Year  
FYDP - Future Years Defense Program  
ICE - Independent Cost Estimate  
IOC - Initial Operational Capability  
Inc - Increment  
JROC - Joint Requirements Oversight Council  
\$K - Thousands of Dollars  
KPP - Key Performance Parameter  
LRIP - Low Rate Initial Production  
\$M - Millions of Dollars  
MDA - Milestone Decision Authority  
MDAP - Major Defense Acquisition Program  
MILCON - Military Construction  
N/A - Not Applicable  
O&M - Operations and Maintenance  
ORD - Operational Requirements Document  
OSD - Office of the Secretary of Defense  
O&S - Operating and Support  
PAUC - Program Acquisition Unit Cost

PB - President's Budget  
PE - Program Element  
PEO - Program Executive Officer  
PM - Program Manager  
POE - Program Office Estimate  
RDT&E - Research, Development, Test, and Evaluation  
SAR - Selected Acquisition Report  
SCP - Service Cost Position  
TBD - To Be Determined  
TY - Then Year  
UCR - Unit Cost Reporting  
U.S. - United States  
USD(AT&L) - Under Secretary of Defense (Acquisition, Technology and Logistics)

## Program Information

**Program Name**

Guided Multiple Launch Rocket System/Guided Multiple Launch Rocket System Alternative Warhead (GMLRS/GMLRS AW)

**DoD Component**

Army

## Responsible Office

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## References

**SAR Baseline (Production Estimate)**

Army Acquisition Executive (AAE) Approved Acquisition Program Baseline (APB) dated May 30, 2003

**Approved APB**

Army Acquisition Executive (AAE) Approved Acquisition Program Baseline (APB) dated May 20, 2015



## Mission and Description

The mission of the Guided Multiple Launch Rocket System/Guided Multiple Launch Rocket System Alternative Warhead (GMLRS/GMLRS AW) is to attack/neutralize/suppress/destroy targets using indirect precision fires. GMLRS/GMLRS AW provides Field Artillery units with medium- and long-range (70+ kilometers (Km)) fires while supporting brigade, division, corps, Army, theater, Joint/Coalition Forces and Marine Air-Ground Task Forces in full, limited or expeditionary operations. The GMLRS/GMLRS AW rocket is a solid propellant artillery rocket deployed from the M270A1 and the High Mobility Artillery Rocket System mobile launch vehicles. GMLRS/GMLRS AW uses an Inertial Measuring Unit with Global Positioning System assistance to guide the rocket to a specific point to deliver effects on target. GMLRS/GMLRS AW is transported and fired in a Launch Pod Container that consists of six rockets. The current GMLRS family of munitions consists of three fielded variants: Dual-Purpose Improved Conventional Munition (DPICM), Unitary (U) and Alternative Warhead (AW).

### **GMLRS DPICM:**

The GMLRS DPICM has a range of 70+ Km, contains 404 M101 grenades and is used to provide precision fires on area targets including personnel and thinly armored vehicles. The GMLRS DPICM was an international cooperative development program with five nations (U.S., United Kingdom, France, Germany and Italy).

### **GMLRS-U:**

The GMLRS-U is equipped with a 200-pound Unitary high explosive warhead with a range of 70+ Km and is effective against multiple targets. The single warhead also limits collateral damage to areas surrounding the designated target.

### **GMLRS AW:**

The GMLRS AW is currently designed to replace the DPICM, provide similar effects at comparable range and eliminate the probability of Unexploded Ordnance (UXO). The GMLRS AW will satisfy the UXO requirements as defined in the June 19, 2008, Department of Defense Policy on Cluster Munitions and Unintended Harm to Civilians.

### **Extended Range (ER) GMLRS:**

A fourth variant of GMLRS, the ER GMLRS, began development in FY 2018. The ER GMLRS will carry both the Unitary and AW warhead to a maximum range of 150+ Km.



## Executive Summary

### Program Highlights Since Last Report

The GMLRS/GMLRS AW requirements are stable and funding is adequate to meet cost, schedule and performance objectives established in the current approved APB. There are no increased risks to the GMLRS/GMLRS AW program since the last SAR.

#### **GMLRS:**

GMLRS FRP XII Contract was awarded on June 15, 2017, as an undefinitized contract action change in the Not To Exceed (NTE) amount of \$471.7M. The NTE was awarded for GMLRS AW, GMLRS Unitary, Low Cost Reduced Range Practice Rocket requirements and depot spares for the Army, U.S. Marine Corps, Germany, France, Finland and Singapore.

The annual Army GMLRS Configuration Steering Board was November 16, 2017; the board recommended no descoping actions.

GMLRS FRP XI Contract was definitized on December 1, 2017, for \$405.6M and quantity of 2,544 rockets.

#### **GMLRS Unitary:**

The Precision Fires Rocket and Missile Systems Project Office executed a GMLRS Unitary Reliability Scoring Conference on May 25, 2017, and assessed the continuous reliability of the GMLRS Unitary at 0.94 (172 Flight Successes of 182 Attempts).

Germany signed a Government International Purchase Request on July 12, 2017, for 100 GMLRS Unitary Rocket Pods.

#### **GMLRS AW:**

There are no significant developments since the last SAR report.

#### **Extended Range (ER) GMLRS:**

The Army Acquisition Executive approved management of the ER GMLRS as a modification program by memorandum on June 26, 2017.

There are no significant software-related issues with this program at this time.



### History of Significant Developments Since Program Initiation

History of Significant Developments Since Program Initiation	
Date	Significant Development Description
June 1998	Milestone II Decision Review was executed in June 1998 approving GMLRS Dual Purpose improved Conventional Munition (DPICM) entry into EMD.
September 1998	A Memorandum of Understanding was finalized in September 1998 with the U.S., United Kingdom, Ireland, Germany, France and Italy, which resulted in a November 1998 EMD contract award for the international development program to produce a common product with sharing and minimizing costs and risks.
October 2000	The GMLRS program was restructured in October 2000 due to development problems experienced by the previous guidance set subcontractor.
December 2001	A special Army Systems Acquisition Review Council (ASARC) was held on December 6, 2001, during which the Acting Army Acquisition Executive (AAE) and the Vice Chief of Staff of the Army reviewed the Nunn-McCurdy Unit Cost breach and initiated Secretary of Defense certification procedures.
December 2002	The GMLRS program was redesignated ACAT IC.
February 2003	A February 2003 Production Readiness Statement concluded that the GMLRS DPICM program was ready for production. The Chief Information Officer certified that both GMLRS DPICM and GMLRS Unitary met all interoperability requirements.
March 2003	A combined ASARC for the GMLRS DPICM and GMLRS Unitary systems was successfully conducted in March 2003. The ASARC approved entry into LRIP for GMLRS DPICM and entry into System Development and Demonstration for GMLRS Unitary. The ADMs were signed on March 24, 2003.
March 2003	The GMLRS DPICM Test and Evaluation Master Plan (TEMP) was signed by the Director, Under Secretary of the Army for Operational Requirements in March 2003. The Test and Evaluation Strategy was approved in May 2003.
November 2003	A paper JROC was completed on November 14, 2003. The JROC Memorandum was published on November 14, 2003, and accepted the Army's proposed change to the threshold average hazardous dud rate for submunitions. The change amends performance requirements for ranges between 20 and 60 kilometers (Km) to less than 2 percent with an objective of 0 percent. The threshold average hazardous dud rate must be less than 4 percent with an objective of 0 percent for ranges between 15-20 kilometers (Km) and 60-70 Km.
March 2004	The GMLRS Unitary TEMP was approved on March 17, 2004.
November 2004	The Initial Operational Testing and Evaluation (IOT&E) was completed on November 10, 2004, and the Army Test and Evaluation Command's Initial Operational Test System Evaluation Report was signed January 26, 2005. All reliability and maintainability requirements in the CDD (formerly ORD) and the performance specification were met or exceeded.
June 2005	The GMLRS DPICM IOC was approved by the AAE on June 22, 2005.
June 2005	The TEMP, supporting the GMLRS DPICM FRP Decision, was signed by the Director of Operational Test and Evaluation on June 8, 2005.
September 2005	In September 2005 the first ever combat fire mission was conducted using GMLRS Unitary rockets against enemy positions in Iraq. At a distance of greater than 50 Km, eight rockets were fired, destroying insurgent strongholds and killing enemy insurgents. Collateral damage to adjacent structures was minimal.
December 2005	The GMLRS DPICM IOC was achieved on or before the Objective APB schedule date.
September 2006	Deliveries of GMLRS Urgent Material Release (UMR) Unitary rockets began in September 2006 and continue to date. These deliveries are in response to a second request received from U.S. Central



	Command for additional UMR Unitary rockets to be used in theater.
January 2007	Title 10, U.S. Code, requires that munitions be Insensitive Munition (IM) compliant. To approach this objective the GMLRS program incorporated the development and procurement of an IM Warhead for Unitary and is investigating other IM related improvements. The GMLRS program submitted an IM Plan of Action and Milestones and a request for IM waiver as part of the PEO Missiles and Space IM Strategic Plan. The IM waiver for FY 2007 through FY 2008 was approved by the JROC on January 4, 2007.
February 2007	The PEO Missiles and Space submitted a Program Deviation Report (PDR) to the MDA on February 9, 2007, which provided notification that the GMLRS program anticipates a critical Nunn-McCurdy unit cost breach. Consequently, the GMLRS program completed an intense review by a certification team composed of five separate Integrated Product Teams.
April 2007	The GMLRS program successfully obtained Nunn-McCurdy Certification on April 26, 2007, when the DAE signed an ADM approving the continuation of the restructured GMLRS program as ACAT IC. The DAE directed GMLRS to restructure the program to "buy-to-budget" additional rocket quantities as can be afforded in each year, FY 2008 through FY 2013. The DAE further instructed the PM to actively pursue the potential for a multi-year procurement strategy beginning with FRP.
May 2007	The May 2, 2007 GMLRS Unitary Milestone C and LRIP Decision ADM approved the Acquisition Strategy and APB.
June 2008	A GMLRS AW Directed Requirement Memorandum signed by the Army Deputy Chief of Staff for Operations, Plans and Training on June 25, 2008, validated the requirement for GMLRS AW.
December 2008	GMLRS Unitary FRP Decision was approved on December 23, 2008, and IOC was achieved in December 2008.
July 2009	The GMLRS AW project received validation of the current GMLRS Analysis of Alternatives on July 31, 2009.
September 2009	On September 11, 2009, the AAE granted GMLRS approval to enter into the Technology Development at Milestone A.
November 2009	The GMLRS DPICM program completed its last production on November 5, 2009.
February 2010	The GMLRS class Justification & Approval (J&A) was approved on February 18, 2010, for the procurement of continued FRP of the GMLRS Unitary for FY 2010 through FY 2012.
February 2011	In the FY 2012 PB, a GMLRS RDT&E funding increase caused a Total RDT&E cost breach. The increase funded technological enhancements to the GMLRS Unitary based on emerging requirements currently in the Joint Capabilities Integration Development System process. Future increments of GMLRS will utilize these enhancements to further reduce collateral damage and expand target options for the Warfighter.
April 2011	The GMLRS AW Sole Source J&A for the EMD Contract to Lockheed Martin Missiles and Fire Controls -Dallas (LMMFC-D) was approved by the AAE on April 29, 2011.
July 2011	The Aviation and Missile Command Source Selection Authority completed evaluation of the three competing AW designs on July 25, 2011, and selected the Alliant Techsystems, Inc (ATK) warhead for the GMLRS AW rocket. ATK was designated as the Government-directed subcontractor to LMMFC-D for EMD.
February 2012	Milestone B Decision Review was executed on February 19, 2012, approving entry into EMD.
July 2013	The GMLRS AW program successfully completed the Critical Design Review at the system level. All Engineering Development Test flight tests were successfully completed (seven rockets fired over three tests), placing the program on track to meet the reliability growth curve.
September 2013	The Precision Fires Rocket and Missile Systems Project Office took delivery of the 20,000th GMLRS rocket.
September 2014	The GMLRS AW warhead production line was assessed at Manufacturing Readiness Level (MRL) 9 in

	September 2014. The rocket integration production line at Lockheed Martin-Camden, Arkansas, was assessed at MRL 9 in October 2014.
November 2014	The GMLRS AW program successfully completed all testing for the EMD phase. IOT&E completed in November 2014. The reliability was assessed at 0.97 for IOT&E and an overall reliability of 0.99 for EMD. This exceeds the CDD requirement of 0.95.
April 2015	The GMLRS AW program successfully completed the combined Milestone C and FRP Decision Review on April 8, 2015. The GMLRS AW Cost Position was approved on April 15, 2015. The ADM to enter into Production and Deployment and begin FRP and the revised APB were approved by the AAE on May 20, 2015.
September 2015	GMLRS AW completed IOT&E with an assessed reliability of 0.97 (29 Flight Success of 30 attempts). GMLRS AW test program achieved an overall reliability of 0.99 (98 Flight Success of 99 Attempts). The JROC was briefed in September 2015.
March 2016	IM rocket motor contracts were awarded to Orbital ATK and Aerojet Rocketdyne on March 4, 2016, for \$17.8M and \$13.8M, respectively. The two 22-month contracts result in qualified IM rocket motor for GMLRS.
July 2016	The first six GMLRS AW rocket pods were delivered to Letterkenny Munitions Center on July 7, 2016.
September 2016	The GMLRS AW program successfully completed IOC in November 2016. The IOC quantity of 54 GMLRS AW pods was delivered in September 2016. Type Classification was approved on October 13, 2016. Full Materiel Release was approved on November 7, 2016.
October 2016	The Deputy Secretary of Defense directed the Army to conduct a 140-Km range, multi-domain, GMLRS improvement program. The AAE approved and signed the Extended Range (ER) GMLRS modification memorandum on June 26, 2017.
June 2017	The GMLRS/GMLRS AW program experienced breaches in RDT&E costs and PAUC as the result of additional Army funding in FY 2018 through FY 2022 to support modification and testing of the ER GMLRS. A PDR was submitted to the MDA.

## Threshold Breaches

### APB Breaches

<b>Schedule</b>		<input type="checkbox"/>
<b>Performance</b>		<input type="checkbox"/>
<b>Cost</b>	RDT&E	<input checked="" type="checkbox"/>
	Procurement	<input checked="" type="checkbox"/>
	MILCON	<input type="checkbox"/>
	Acq O&M	<input type="checkbox"/>
<b>O&amp;S Cost</b>		<input checked="" type="checkbox"/>
<b>Unit Cost</b>	PAUC	<input type="checkbox"/>
	APUC	<input type="checkbox"/>

### Explanation of Breach

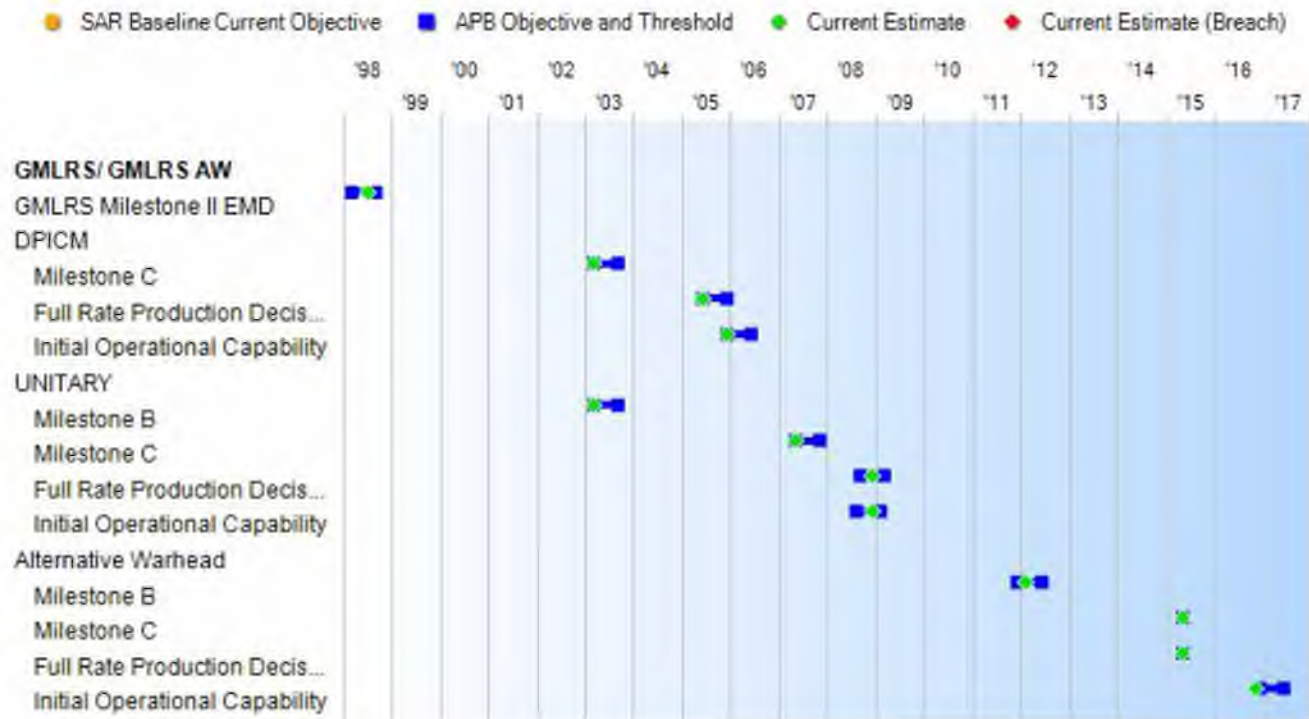
The RDT&E Cost breach was previously reported in the December 2016 SAR.

The Procurement Cost breach is due to an increase in quantities from 43,560 to 96,186 rockets to support the Total Army Munitions Requirement. The O&S Cost breach is a result of the quantity increase. A Program Deviation Report will be submitted to the MDA.

### Nunn-McCurdy Breaches

<b>Current UCR Baseline</b>		
	PAUC	None
	APUC	None
<b>Original UCR Baseline</b>		
	PAUC	None
	APUC	None

## Schedule





Schedule Events				
Events	SAR Baseline Production Estimate	Current APB Production Objective/Threshold		Current Estimate
GMLRS Milestone II EMD	Mar 1998	Mar 1998	Sep 1998	Jul 1998
DPICM				
Milestone C	Mar 2003	Mar 2003	Sep 2003	Mar 2003
Full Rate Production Decision	Mar 2005	Jun 2005	Dec 2005	Jun 2005
Initial Operational Capability	Nov 2006	Dec 2005	Jun 2006	Dec 2005
UNITARY				
Milestone B	Mar 2003	Mar 2003	Sep 2003	Mar 2003
Milestone C	Sep 2006	May 2007	Nov 2007	May 2007
Full Rate Production Decision	Sep 2008	Sep 2008	Mar 2009	Dec 2008
Initial Operational Capability	Mar 2008	Aug 2008	Feb 2009	Dec 2008
Alternative Warhead				
Milestone B	N/A	Dec 2011	Jun 2012	Feb 2012
Milestone C	N/A	May 2015	May 2015	May 2015
Full Rate Production Decision	N/A	May 2015	May 2015	May 2015
Initial Operational Capability	N/A	Dec 2016	Jun 2017	Nov 2016

#### Change Explanations

None

#### Acronyms and Abbreviations

DPICM - Dual Purpose Improved Conventional Munition



## Performance

Performance Characteristics				
SAR Baseline Production Estimate	Current APB Production Objective/Threshold		Demonstrated Performance	Current Estimate
DPICM				
Range				
Max (Km)				
70	70	60	73	70
Min (Km)				
10	10	15	15	10
Effectiveness				
(Expected Fractional Damage [EFD])				
30%	30%	30%	30%	30%
Reliability				
.95	.95	.92	0.88	0.92
Hazardous Dud Rate				
0	0%	2%/4%	1.71%/3.75%	1.71%/3.75%
UNITARY				
Range				
Max (Km)				
70	70	60	84	70
Min (Km)				
10	10	15	15	15
Effectiveness				
30%	30%	Functional Kill	Meets Threshold	30%
Reliability				
.95	.95	.92	0.94	0.94
Alternative Warhead				
Range				
Max (Km)				
N/A	70	60	70	70
Min (Km)				
N/A	10	15	15	15
Effectiveness				
N/A	30%	Functional Kill	Meets Threshold	Meets Threshold

Ch-1

(Ch-1)

Reliability				
N/A	.95	.92	0.99	0.99
Hazardous Dud Rate				
N/A	0%	<1%	0%	0%

#### Requirements Reference

ORD dated November 14, 2003 (includes Dual Purpose Improved Conventional Munitions), Multiple Launch Rocket System Guided Unitary Rocket ORD dated May 16, 2007 (in lieu of CPD), and GMLRS System Alternative Warhead Increment III CDD dated November 8, 2011

#### Change Explanations

(Ch-1) Unitary Reliability Current Estimate changed from 0.92 to 0.94 based on continued demonstrated performance.

#### Notes

The GMLRS AW CDD, in lieu of a CPD, supporting the FRP Decision was JROC approved on May 15, 2015.

The GMLRS DPICM Demonstrated Performance in Reliability is 0.88. The GMLRS Reliability Working Group conducted a GMLRS DPICM Reliability Scoring Conference on May 25, 2017. The GMLRS DPICM Reliability was assessed at 0.88 (124 Flight Successes of 141 Attempts).

The GMLRS Unitary Demonstrated Performance in Reliability is 0.94. The GMLRS Reliability Working Group conducted a GMLRS Unitary Reliability Scoring Conference on May 25, 2017. The GMLRS Unitary Reliability was assessed at 0.94 (172 Flight Successes of 182 Attempts).

The GMLRS AW program completed the Initial Operational Test and Evaluation with an assessed reliability of 0.97 (29 Flight Successes of 30 Attempts). GMLRS AW test program achieved an overall reliability of 0.99 (98 flight successes of 99 attempts).

#### Acronyms and Abbreviations

DPICM - Dual Purpose Improved Conventional Munitions

Max (Km) - Maximum Kilometers

Min (Km) - Minimum Kilometers



## Track to Budget

### RDT&E

Appn	BA	PE	
Army	2040	07	0205778A
	<b>Project</b>	<b>Name</b>	
	EG2	GMLRS AW	
	EG3	GMLRS	
Army	2040	07	0603778A
	<b>Project</b>	<b>Name</b>	
	784	GMLRS (Sunk)	
	78G	GMLRS AW (Sunk)	

### Procurement

Appn	BA	PE	
Army	2032	02	0210602A
	<b>Line Item</b>	<b>Name</b>	
	C65404	GMLRS (Army)	
	C65406	GMLRS (Army)	

### Notes

Line Item C64400 is the parent line for Line Items C65404 and C65406.

### Acq O&M

Appn	BA	PE	
Army	2020	04	0702806A
	<b>Subactivity Group</b>	<b>Name</b>	
	435	Acquisition and Management Support: Precision (Shared) Fires Rocket and Missile Systems Project Office	

## Cost and Funding

### Cost Summary

Total Acquisition Cost							
Appropriation	BY 2003 \$M			BY 2003 \$M	TY \$M		
	SAR Baseline Production Estimate	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Production Estimate	Current APB Production Objective	Current Estimate
RDT&E	485.4	826.7	909.4	1113.1 <sup>1</sup>	500.5	957.1	1348.0
Procurement	9294.8	4367.1	4803.8	10446.3 <sup>1</sup>	11348.4	5796.3	15367.1
Flyaway	--	--	--	10413.1	--	--	15327.1
Recurring	--	--	--	9956.2	--	--	14649.8
Non Recurring	--	--	--	456.9	--	--	677.3
Support	--	--	--	33.2	--	--	40.0
Other Support	--	--	--	30.9	--	--	37.1
Initial Spares	--	--	--	2.3	--	--	2.9
MILCON	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	--	28.7	0.0	0.0	45.0
Total	9780.2	5193.8	N/A	11588.1	11848.9	6753.4	16760.1

<sup>1</sup> APB Breach

#### Current APB Cost Estimate Reference

GMLRS Alternative Warhead (AW) Army Cost Position dated April 14, 2015

#### Cost Notes

The RDT&E Cost breach was previously reported in the December 2016 SAR.

The Procurement Cost breach is due to an increase in quantities from 43,560 to 96,186 rockets to support the Total Army Munitions Requirement.

In accordance with section 842 of the National Defense Authorization Act for FY 2017, which amended title 10 U.S.C. § 2334, the Director of Cost Assessment and Program Evaluation, and the Secretary of the military department concerned or the head of the Defense Agency concerned, must issue guidance requiring a discussion of risk, the potential impacts of risk on program costs and approaches to mitigate risk in cost estimates for MDAPs and major subprograms. The information required by the guidance is to be reported in each SAR. This guidance is not yet available; therefore, the information on cost risk is not contained in this SAR.

Beginning in FY 2019, the Army realigned direct civilian personnel pay costs from RDT&E and Procurement investment accounts to O&M to provide additional transparency and auditability.

Total Quantity			
Quantity	SAR Baseline Production Estimate	Current APB Production	Current Estimate
RDT&E	235	376	420
Procurement	140004	43560	96186
Total	140239	43936	96606

**Quantity Notes**

FY 2019 Procurement funding includes \$624.5M Overseas Contingency Operations funding for 6,183 rockets.



## Cost and Funding

### Funding Summary

Appropriation Summary									
FY 2019 President's Budget / December 2017 SAR (TY\$ M)									
Appropriation	Prior	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
RDT&E	835.3	102.8	154.1	134.7	54.3	64.8	2.0	0.0	1348.0
Procurement	3399.4	786.7	984.6	598.9	655.3	718.8	876.1	7347.3	15367.1
MILCON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	2.8	2.8	2.9	2.9	3.0	30.6	45.0
PB 2019 Total	4234.7	889.5	1141.5	736.4	712.5	786.5	881.1	7377.9	16760.1
PB 2018 Total	4235.4	889.5	344.4	451.0	320.2	424.4	593.7	309.5	7568.1
Delta	-0.7	0.0	797.1	285.4	392.3	362.1	287.4	7068.4	9192.0

Quantity Summary										
FY 2019 President's Budget / December 2017 SAR (TY\$ M)										
Quantity	Undistributed	Prior	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Development	420	0	0	0	0	0	0	0	0	420
Production	0	26630	6000	9450	5142	5118	5118	3942	34786	96186
PB 2019 Total	420	26630	6000	9450	5142	5118	5118	3942	34786	96606
PB 2018 Total	376	26630	6000	1242	2352	1650	1848	2496	1342	43936
Delta	44	0	0	8208	2790	3468	3270	1446	33444	52670

## Cost and Funding

### Annual Funding By Appropriation

Annual Funding							
2040   RDT&E   Research, Development, Test, and Evaluation, Army							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1998	--	--	--	--	--	--	13.6
1999	--	--	--	--	--	--	17.7
2000	--	--	--	--	--	--	26.8
2001	--	--	--	--	--	--	16.8
2002	--	--	--	--	--	--	45.6
2003	--	--	--	--	--	--	59.4
2004	--	--	--	--	--	--	54.4
2005	--	--	--	--	--	--	90.0
2006	--	--	--	--	--	--	98.3
2007	--	--	--	--	--	--	43.2
2008	--	--	--	--	--	--	33.5
2009	--	--	--	--	--	--	46.3
2010	--	--	--	--	--	--	18.4
2011	--	--	--	--	--	--	12.2
2012	--	--	--	--	--	--	43.3
2013	--	--	--	--	--	--	61.2
2014	--	--	--	--	--	--	53.7
2015	--	--	--	--	--	--	43.7
2016	--	--	--	--	--	--	36.0
2017	--	--	--	--	--	--	21.2
2018	--	--	--	--	--	--	102.8
2019	--	--	--	--	--	--	154.1
2020	--	--	--	--	--	--	134.7
2021	--	--	--	--	--	--	54.3
2022	--	--	--	--	--	--	64.8
2023	--	--	--	--	--	--	2.0
Subtotal	420	--	--	--	--	--	1348.0



Annual Funding 2040   RDT&E   Research, Development, Test, and Evaluation, Army							
Fiscal Year	Quantity	BY 2003 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1998	--	--	--	--	--	--	14.3
1999	--	--	--	--	--	--	18.4
2000	--	--	--	--	--	--	27.4
2001	--	--	--	--	--	--	17.0
2002	--	--	--	--	--	--	45.6
2003	--	--	--	--	--	--	58.3
2004	--	--	--	--	--	--	52.1
2005	--	--	--	--	--	--	83.8
2006	--	--	--	--	--	--	89.0
2007	--	--	--	--	--	--	38.2
2008	--	--	--	--	--	--	29.1
2009	--	--	--	--	--	--	39.7
2010	--	--	--	--	--	--	15.5
2011	--	--	--	--	--	--	10.1
2012	--	--	--	--	--	--	35.3
2013	--	--	--	--	--	--	49.1
2014	--	--	--	--	--	--	42.2
2015	--	--	--	--	--	--	33.8
2016	--	--	--	--	--	--	27.6
2017	--	--	--	--	--	--	16.0
2018	--	--	--	--	--	--	76.4
2019	--	--	--	--	--	--	112.9
2020	--	--	--	--	--	--	96.8
2021	--	--	--	--	--	--	38.3
2022	--	--	--	--	--	--	44.8
2023	--	--	--	--	--	--	1.4
Subtotal	420	--	--	--	--	--	1113.1

Annual Funding							
2032   Procurement   Missile Procurement, Army							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2003	822	110.4	--	13.1	123.5	6.6	130.1
2004	683	97.2	--	7.0	104.2	4.8	109.0
2005	954	96.9	--	3.7	100.6	11.3	111.9
2006	984	119.8	--	0.3	120.1	1.5	121.6
2007	925	123.4	--	0.9	124.3	0.7	125.0
2008	2070	241.8	--	20.8	262.6	1.1	263.7
2009	2646	298.7	--	10.1	308.8	0.4	309.2
2010	3228	343.7	--	--	343.7	0.4	344.1
2011	2442	264.1	--	--	264.1	0.4	264.5
2012	2940	332.8	--	--	332.8	0.4	333.2
2013	1824	232.9	--	--	232.9	0.4	233.3
2014	2166	269.6	--	3.0	272.6	0.4	273.0
2015	450	121.5	--	5.2	126.7	0.4	127.1
2016	1542	234.5	--	14.5	249.0	2.1	251.1
2017	2954	385.6	--	16.5	402.1	0.5	402.6
2018	6000	703.7	--	82.5	786.2	0.5	786.7
2019	9450	936.4	--	47.7	984.1	0.5	984.6
2020	5142	571.7	--	26.7	598.4	0.5	598.9
2021	5118	625.7	--	29.1	654.8	0.5	655.3
2022	5118	686.5	--	31.8	718.3	0.5	718.8
2023	3942	837.1	--	38.5	875.6	0.5	876.1
2024	3798	694.3	--	32.2	726.5	0.5	727.0
2025	3792	708.5	--	32.8	741.3	0.5	741.8
2026	3792	722.0	--	33.4	755.4	0.5	755.9
2027	3798	736.5	--	34.1	770.6	0.5	771.1
2028	3750	752.8	--	34.8	787.6	0.6	788.2
2029	3750	767.3	--	35.4	802.7	0.6	803.3
2030	3750	782.2	--	36.1	818.3	0.6	818.9
2031	3750	797.4	--	36.8	834.2	0.6	834.8
2032	3774	813.0	--	37.7	850.7	0.6	851.3
2033	832	235.4	--	12.6	248.0	0.6	248.6
2034	--	--	6.4	--	6.4	--	6.4
Subtotal	96186	14643.4	6.4	677.3	15327.1	40.0	15367.1



Annual Funding 2032   Procurement   Missile Procurement, Army							
Fiscal Year	Quantity	BY 2003 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2003	822	106.1	--	12.6	118.7	6.3	125.0
2004	683	90.9	--	6.6	97.5	4.5	102.0
2005	954	88.2	--	3.4	91.6	10.2	101.8
2006	984	106.7	--	0.3	107.0	1.3	108.3
2007	925	107.8	--	0.8	108.6	0.6	109.2
2008	2070	208.0	--	17.9	225.9	0.9	226.8
2009	2646	253.7	--	8.6	262.3	0.3	262.6
2010	3228	287.0	--	--	287.0	0.3	287.3
2011	2442	216.7	--	--	216.7	0.3	217.0
2012	2940	269.1	--	--	269.1	0.3	269.4
2013	1824	184.4	--	--	184.4	0.3	184.7
2014	2166	211.5	--	2.3	213.8	0.3	214.1
2015	450	94.0	--	4.1	98.1	0.3	98.4
2016	1542	178.4	--	11.1	189.5	1.6	191.1
2017	2954	288.4	--	12.3	300.7	0.4	301.1
2018	6000	517.0	--	60.6	577.6	0.4	578.0
2019	9450	674.9	--	34.3	709.2	0.4	709.6
2020	5142	404.0	--	18.8	422.8	0.4	423.2
2021	5118	433.5	--	20.2	453.7	0.3	454.0
2022	5118	466.3	--	21.6	487.9	0.3	488.2
2023	3942	557.4	--	25.7	583.1	0.3	583.4
2024	3798	453.3	--	21.0	474.3	0.3	474.6
2025	3792	453.5	--	21.0	474.5	0.3	474.8
2026	3792	453.0	--	21.0	474.0	0.3	474.3
2027	3798	453.1	--	21.0	474.1	0.3	474.4
2028	3750	454.0	--	21.0	475.0	0.4	475.4
2029	3750	453.7	--	20.9	474.6	0.4	475.0
2030	3750	453.4	--	21.0	474.4	0.3	474.7
2031	3750	453.2	--	20.9	474.1	0.3	474.4
2032	3774	453.0	--	21.0	474.0	0.3	474.3
2033	832	128.6	--	6.9	135.5	0.3	135.8
2034	--	--	3.4	--	3.4	--	3.4
Subtotal	96186	9952.8	3.4	456.9	10413.1	33.2	10446.3

FY 2023 includes an estimate of \$0.4M for training devices.

Annual Funding		
2020   Acq O&M   Operation and Maintenance, Army		
Fiscal Year	TY \$M	
	Total Program	
2019		2.8
2020		2.8
2021		2.9
2022		2.9
2023		3.0
2024		3.1
2025		3.1
2026		3.2
2027		3.3
2028		3.3
2029		3.4
2030		3.4
2031		3.5
2032		3.2
2033		1.1
Subtotal		45.0

Annual Funding 2020   Acq O&M   Operation and Maintenance, Army		
Fiscal Year	BY 2003 \$M	
	Total Program	
2019		2.1
2020		2.0
2021		2.0
2022		2.0
2023		2.0
2024		2.1
2025		2.0
2026		2.0
2027		2.1
2028		2.0
2029		2.0
2030		2.0
2031		2.0
2032		1.8
2033		0.6
Subtotal		28.7

## Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
<b>Approval Date</b>	3/24/2003	1/7/2013
<b>Approved Quantity</b>	13998	4445
<b>Reference</b>	Milestone C ADM (DPICM)	Acquisition Strategy (AW)
<b>Start Year</b>	2003	2003
<b>End Year</b>	2005	2015

The GMLRS DPICM Milestone C ADM signed on March 24, 2003, approved an LRIP quantity not to exceed 13,998 rockets. This quantity was based on the Army Acquisition Objective of 140,004 rockets. The actual GMLRS DPICM LRIP quantity is 1,961 rockets.

The GMLRS Unitary Milestone C ADM signed May 2, 2007, approved an LRIP quantity not to exceed 3,480 rockets based on the total expected procurement quantity of 34,848. The actual GMLRS LRIP quantity is 2,484 rockets.

The GMLRS AW Milestone B ADM signed on February 19, 2012, approved an LRIP quantity of 498 rockets. However, the Acquisition Strategy for GMLRS AW signed on January 7, 2013, states the program will conduct the Initial Operational Test and Evaluation (IOT&E) during the EMD phase and combine Milestone C with the FRP Decision Review. Therefore, no LRIP is needed. Necessary assets were procured to support IOT&E during EMD.



## Foreign Military Sales

Country	Date of Sale	Quantity	Total Cost \$M	Description
Germany	7/12/2017	100	82.5	GMLRS Unitary rockets. International Cooperative Program. Agreement Number GIPR018GE
Finland	1/27/2017	8	8.8	GMLRS AW Rockets. Case ID FI-B-VAR
France	12/22/2016	25	19.4	GMLRS Unitary rockets. International Cooperative Program. Agreement Number GIPR012FR
Germany	12/20/2016	2	1.9	GMLRS Unitary rockets. International Cooperative Program. Agreement Number GIPR017GE
France	8/9/2016	21	24.6	GMLRS Unitary Rockets. Case ID FR-B-WAN
Finland	2/10/2016	15	17.7	GMLRS Unitary rockets. Case ID FI-B-VAQ
Finland	2/10/2016	25	28.7	GMLRS AW rockets. Case ID FI-B-VAP
Jordan	2/5/2016	24	28.9	GMLRS AW rockets. Case ID JO-B-YAY
United Arab Emirates	3/12/2015	65	83.5	GMLRS Unitary rockets. Case ID AE-B-ZVE
Bahrain	6/30/2014	4	5.6	GMLRS Unitary rockets. Case ID BA-B-UIW
Singapore	2/28/2014	58	54.8	GMLRS Unitary rockets. Case ID SN-B-VFM
Italy	12/5/2012	25	18.6	GMLRS Unitary rockets. International Cooperative Program. Agreement Number GIPR004IT
Singapore	3/26/2012	12	10.1	GMLRS Unitary rockets. Case ID SN-B-VET
Italy	11/30/2011	11	7.8	GMLRS Unitary rockets. International Cooperative Program. Agreement Number GIPR001IT
Japan	5/1/2011	28	22.5	GMLRS Unitary rockets. Case ID JA-B-XIJ
Singapore	2/25/2011	14	10.2	GMLRS Unitary rockets. Case ID SN-N-VEN
Germany	11/24/2010	2	1.3	GMLRS Unitary rockets. International Cooperative Program. Agreement Number GIPR010GE
United Kingdom	2/1/2010	72	48.9	GMLRS Unitary rockets. International Cooperative Program. Agreement Number GIPR011UK
Jordan	1/27/2010	72	47.1	GMLRS Unitary rockets. Case ID JO-B-WYB
France	12/4/2009	43	33.8	GMLRS Unitary rockets. International Cooperative Program. Agreement Number GIPR004FR
Germany	6/1/2009	20	13.6	GMLRS Unitary rockets. International Cooperative Program. Agreement Number GIPR009GE
Japan	2/1/2009	30	22.7	GMLRS Unitary rockets. Case ID JA-B-XGH
United Kingdom	1/12/2009	50	31.5	GMLRS Unitary rockets. International Cooperative Program. Agreement Number GIPR008UK
France	12/18/2008	2	1.4	GMLRS Unitary rockets. International Cooperative Program. Agreement Number GIPR002FR
United Kingdom	12/5/2008	168	105.8	GMLRS Unitary rockets. International Cooperative Program. Agreement Number GIPR007UK
Germany	10/15/2008	35	24.5	GMLRS Unitary rockets. International Cooperative Program. Agreement Number GIPR006GE
United Kingdom	7/25/2008	75	48.5	GMLRS Unitary rockets. International Cooperative Program. Agreement Number GIPR003UK
Germany	12/31/2007	13	9.4	GMLRS Unitary rockets. International Cooperative Program. Agreement Number GIPR001GE
Singapore	12/5/2007	18	15.0	GMLRS Unitary rockets. Case ID SN-B-VDO

United Arab Emirates	8/1/2007	130	102.8	GMLRS DPICM and Unitary rockets. Case ID AE-B-ZUD
United Kingdom	8/15/2005	109	67.7	GMLRS Unitary rockets. International Cooperative Program. Agreement Number GIPR001UK

### Notes

All quantities are listed as rocket pods. The rocket pod refers to the Launch Pod Container that consists of six guided rockets.

The Multiple Launch Rocket System (MLRS) was cooperatively developed under a Memorandum of Understanding (MOU) partnership between the U.S., United Kingdom (UK), France, Germany and Italy. The design for the GMLRS DPICM rocket was developed under the terms and conditions of the MLRS MOU.

Only the U.S. and the United Arab Emirates (UAE) procured and continue to maintain stockpiles of M30 GMLRS DPICM pods.

Two additional variants of GMLRS were developed by the U.S. Army: the M31A1 GMLRS Unitary and M30A1 GMLRS AW. The following nations procured and continue to maintain stockpiles of M31A1 GMLRS Unitary pods: Bahrain, France, Germany, Italy, Japan, Jordan, Singapore, UAE, UK and U.S.

The U.S., Jordan and Finland procured and continue to maintain stockpiles of M30A1 GMLRS AW.

### Acronyms and Abbreviations

DPICM - Dual Purpose Improved Conventional Munition

## Nuclear Costs

None



## Unit Cost

Current UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2003 \$M	BY 2003 \$M	% Change
	Current UCR Baseline (May 2015 APB)	Current Estimate (Dec 2017 SAR)	
Program Acquisition Unit Cost			
Cost	5193.8	11588.1	
Quantity	43936	96606	
Unit Cost	0.118	0.120	+1.69
Average Procurement Unit Cost			
Cost	4367.1	10446.3	
Quantity	43560	96186	
Unit Cost	0.100	0.109	+9.00

Original UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2003 \$M	BY 2003 \$M	% Change
	Revised Original UCR Baseline (Jun 2007 APB)	Current Estimate (Dec 2017 SAR)	
Program Acquisition Unit Cost			
Cost	4578.4	11588.1	
Quantity	43795	96606	
Unit Cost	0.105	0.120	+14.29
Average Procurement Unit Cost			
Cost	3966.7	10446.3	
Quantity	43560	96186	
Unit Cost	0.091	0.109	+19.78

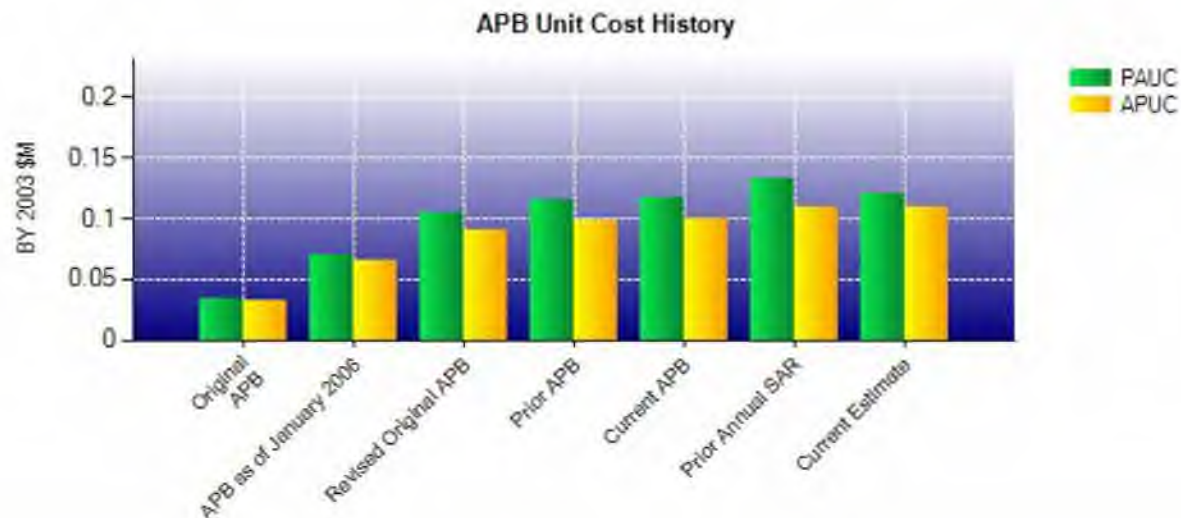
The GMLRS hardware maintains approximately 80 percent commonality regardless of which warhead is integrated into the system. Consequently, changes in cost of any variant directly affect the APUCs and PAUCs of the others.

The split-out APUC and PAUC of the GMLRS variants are:

GMLRS DPICM APUC (\$0.133M (BY\$ 2003); Quantity (Qty) = 2,472)  
 GMLRS UNITARY APUC (\$0.089M (BY\$ 2003); Qty = 39,882)  
 GMLRS AW APUC (\$0.092M (BY\$ 2003); Qty = 25,440)  
 GMLRS Unitary ER APUC (\$0.142M (BY\$ 2003), Qty = 14,412)  
 GMLRS AW ER APUC (\$0.152M (BY\$ 2003), Qty = 13,980)

GMLRS DPICM PAUC (\$0.189M (BY\$ 2003); Qty = 2,565)  
 GMLRS UNITARY PAUC (\$0.097M (BY\$ 2003); Qty = 40,024)  
 GMLRS AW PAUC (\$0.098M (BY\$ 2003); Qty = 25,581)  
 GMLRS Unitary ER PAUC (\$0.157M (BY\$ 2003), Qty = 14,435)  
 GMLRS AW ER PAUC (\$0.168M (BY\$ 2003), Qty = 14,001)

All GMLRS variants benefit from RDT&E-funded future system enhancements, for example: insensitive munitions, obsolescence, cost reduction initiatives; therefore, an artificial pro-rating must be calculated to include them in the split-out PAUCs above. The split-out PAUCs exclude the funding for these future enhancements; these dollars are included in the composite PAUC shown in the Unit Cost section.



APB Unit Cost History					
Item	Date	BY 2003 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	Mar 1998	0.034	0.032	0.039	0.037
APB as of January 2006	May 2003	0.070	0.066	0.084	0.081
Revised Original APB	Jun 2007	0.105	0.091	0.133	0.119
Prior APB	Feb 2012	0.116	0.099	0.146	0.127
Current APB	May 2015	0.118	0.100	0.154	0.133
Prior Annual SAR	Dec 2016	0.133	0.109	0.172	0.142
Current Estimate	Dec 2017	0.120	0.109	0.173	0.160

### SAR Unit Cost History

Initial SAR Baseline to Current SAR Baseline (TY \$M)									
Initial PAUC Development Estimate	Changes								PAUC Production Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.039	-0.003	0.001	0.001	0.009	0.037	0.000	0.000	0.045	0.084

Current SAR Baseline to Current Estimate (TY \$M)									
PAUC Production Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.084	0.005	0.002	0.031	0.000	0.051	0.000	0.000	0.089	0.173



Initial SAR Baseline to Current SAR Baseline (TY \$M)									
Initial APUC Development Estimate	Changes								APUC Production Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.037	-0.003	0.004	0.001	0.006	0.036	0.000	0.000	0.044	0.081

Current SAR Baseline to Current Estimate (TY \$M)									
APUC Production Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.081	0.005	-0.001	0.031	0.000	0.044	0.000	0.000	0.079	0.160

SAR Baseline History				
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	Current Estimate
Milestone I	N/A	N/A	N/A	N/A
Milestone II	N/A	Mar 1998	Mar 1998	Jul 1998
Milestone C	N/A	Oct 2003	Mar 2003	Mar 2003
IOC	N/A	Apr 2004	Nov 2006	Dec 2005
Total Cost (TY \$M)	N/A	1688.6	11848.9	16760.1
Total Quantity	N/A	43182	140239	96606
PAUC	N/A	0.039	0.084	0.173

The Milestone C and IOC reported above reflect the GMLRS Dual Purpose Improved Conventional Munition variant. Milestone C for the GMLRS Unitary variant was approved May 2007 and GMLRS AW variant was approved May 2015. IOC for the GMLRS Unitary variant was approved December 2008 and GMLRS AW variant was approved November 2016.

**Cost Variance**

Summary TY \$M					
Item	RDT&E	Procurement	MILCON	Acq O&M	Total
SAR Baseline (Production Estimate)	500.5	11348.4	--	--	11848.9
Previous Changes					
Economic	+4.3	+521.8	--	--	+526.1
Quantity	+196.0	-8922.7	--	--	-8726.7
Schedule	-9.1	+1390.4	--	--	+1381.3
Engineering	--	+10.8	--	--	+10.8
Estimating	+679.9	+1836.9	--	--	+2516.8
Other	--	--	--	--	--
Support	--	+10.9	--	--	+10.9
Subtotal	+871.1	-5151.9	--	--	-4280.8
Current Changes					
Economic	-6.5	-28.3	--	--	-34.8
Quantity	+16.0	+5155.5	--	--	+5171.5
Schedule	--	+1604.1	--	--	+1604.1
Engineering	--	+13.2	--	--	+13.2
Estimating	-33.1	+2420.9	--	+45.0	+2432.8
Other	--	--	--	--	--
Support	--	+5.2	--	--	+5.2
Subtotal	-23.6	+9170.6	--	+45.0	+9192.0
Total Changes	+847.5	+4018.7	--	+45.0	+4911.2
CE - Cost Variance	1348.0	15367.1	--	45.0	16760.1
CE - Cost & Funding	1348.0	15367.1	--	45.0	16760.1



Summary BY 2003 \$M					
Item	RDT&E	Procurement	MILCON	Acq O&M	Total
SAR Baseline (Production Estimate)	485.4	9294.8	--	--	9780.2
Previous Changes					
Economic	--	--	--	--	--
Quantity	+159.0	-5929.7	--	--	-5770.7
Schedule	-5.1	+218.8	--	--	+213.7
Engineering	--	+8.5	--	--	+8.5
Estimating	+485.3	+1124.6	--	--	+1609.9
Other	--	--	--	--	--
Support	--	+9.5	--	--	+9.5
Subtotal	+639.2	-4568.3	--	--	-3929.1
Current Changes					
Economic	--	--	--	--	--
Quantity	+11.7	+3241.0	--	--	+3252.7
Schedule	--	+1054.2	--	--	+1054.2
Engineering	--	+8.2	--	--	+8.2
Estimating	-23.2	+1413.4	--	+28.7	+1418.9
Other	--	--	--	--	--
Support	--	+3.0	--	--	+3.0
Subtotal	-11.5	+5719.8	--	+28.7	+5737.0
Total Changes	+627.7	+1151.5	--	+28.7	+1807.9
CE - Cost Variance	1113.1	10446.3	--	28.7	11588.1
CE - Cost & Funding	1113.1	10446.3	--	28.7	11588.1

Previous Estimate: December 2016

RDT&E	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-6.5
Quantity variance resulting from an increase of 44 test rockets from 376 to 420 due to revised estimate to support Extended Range GMLRS. (Quantity)	+11.7	+16.0
Revised estimate to support Extended Range GMLRS development. (Estimating)	-23.9	-34.0
Adjustment for current and prior escalation. (Estimating)	+0.7	+0.9
RDT&E Subtotal	-11.5	-23.6

Procurement	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-28.3
Total Quantity variance resulting from an increase of 52,626 rockets from 43,560 to 96,186. (Subtotal)	+5696.2	+9081.5
Quantity variance resulting from an increase of 52,626 rockets from 43,560 to 96,186. (Quantity)	(+3241.0)	(+5155.5)
Allocation to Schedule resulting from Quantity change. (Schedule) (QR)	(+1054.2)	(+1685.6)
Allocation to Engineering resulting from Quantity change. (Engineering) (QR)	(+8.2)	(+13.2)
Allocation to Estimating resulting from Quantity change. (Estimating) (QR)	(+1392.8)	(+2227.2)
Acceleration of procurement buy profile due to increase of production capacity in FY 2019. (Schedule)	0.0	-81.5
Revised estimate based on total rockets required and extension in the Procurement buy profile from FY 2024 to FY 2033. (Estimating) (QR)	+41.0	+227.8
Adjustment for current and prior escalation. (Estimating)	+8.0	+10.9
Revised estimate to reflect the Army's realignment of direct civilian pay costs from Procurement investment accounts to O&M to provide additional transparency and auditability. (Estimating)	-28.4	-45.0
Increase in Other Support to align with program extension in FY 2024 to FY 2033. (Support)	+2.9	+5.1
Increase in Initial Spares for GMLRS AW. (Support)	+0.1	+0.1
Procurement Subtotal	+5719.8	+9170.6

(QR) Quantity Related

Acq O&M	\$M	
Current Change Explanations	Base Year	Then Year
Revised estimate to reflect the Army's realignment of direct civilian pay costs from Procurement investment accounts to O&M to provide additional transparency and auditability. (Estimating)	+28.7	+45.0
Acq O&M Subtotal	+28.7	+45.0



## Contracts

### Contract Identification

**Appropriation:** Procurement  
**Contract Name:** GMLRS FRP VII  
**Contractor:** Lockheed Martin Missiles and Fire Control - Dallas  
**Contractor Location:** 1701 W Marshall Drive  
 Grand Prairie, TX 75051-0000  
**Contract Number:** W31P4Q-12-C-0151  
**Contract Type:** Firm Fixed Price (FFP), Cost Plus Fixed Fee (CPFF)  
**Award Date:** June 29, 2012  
**Definitization Date:** June 29, 2012

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
353.2	N/A	3306	553.6	N/A	5550	553.6	553.6

### Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to option exercises, change order incorporations and negotiated reopener clauses.

### Cost and Schedule Variance Explanations

Cost and Schedule Variance reporting is not required on this (FFP/CPFF) contract.

### General Contract Variance Explanation

Cost and Schedule Variance are not reported for this contract because the cost or incentive portion does not meet the threshold requirements for EVM reporting.

### Notes

FRP VIII is an option modification to FRP VII which was awarded December 2012. The contract was extended to March 31, 2018, due to NavStrike obsolescence efforts.

**Contract Identification**

**Appropriation:** Procurement  
**Contract Name:** GMLRS FRP X  
**Contractor:** Lockheed Martin Missiles and Fire Control - Dallas  
**Contractor Location:** 1701 W Marshall Drive  
 Grand Prairie, TX 75051-0000  
**Contract Number:** W31P4Q-15-C-0103  
**Contract Type:** Fixed Price Incentive(Firm Target) (FPIF), Cost Plus Fixed Fee (CPFF)  
**Award Date:** June 04, 2015  
**Definitization Date:** November 01, 2016

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
226.9	N/A	924	197.0	197.0	924	197.0	197.0

**Target Price Change Explanation**

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the increase in Low Cost, Reduced Range Practice Rocket pod quantities for the Army.

**Cost and Schedule Variance Explanations**

Cost and Schedule Variance reporting is not required on this (FPIF/CPFF) contract.

**General Contract Variance Explanation**

Cost and Schedule Variance are not reported for this contract because an EVM Waiver and Class Deviation was approved by the Army Acquisition Executive on December 6, 2015, for all FPIF FRP contracts subsequent to FRP Lot 1.

**Notes**

The contract was executed June 4, 2015, as an undefinitized contract action change order in the Not-To-Exceed (NTE) amount of \$226.9M. The NTE was awarded for GMLRS AW and Low Cost, Reduced Range Practice Rocket requirements and Depot Spares for the Army, U.S. Marine Corps, Bahrain and United Arab Emirates.

FRP X was originally combined with FRP IX and was decoupled during OSD Peer Review. Additional delays in definitization were caused by changing contract type from FFP to FPIF, Army Peer Review requirements and Army Contracting Command personnel shortages. Definitization was November 1, 2016.

The Period of Performance was extended from March 2017 to December 2017 for incoming Receiving Inspection Rework for a U.S. Marine Corps GMLRS AW pod. The Period of Performance was extended from December 2017 to September 2019 for completion of additional tooling to support increased production capacity.



**Contract Identification**

**Appropriation:** Procurement  
**Contract Name:** GMLRS FRP XI  
**Contractor:** Lockheed Martin Missiles and Fire Control - Dallas  
**Contractor Location:** 1701 W Marshall Drive  
 Grand Prairie, TX 75051-0000  
**Contract Number:** W31P4Q-16-C-0102  
**Contract Type:** Fixed Price Incentive(Firm Target) (FPIF), Cost Plus Fixed Fee (CPFF)  
**Award Date:** May 19, 2016  
**Definitization Date:** December 01, 2017

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
331.7	331.7	1944	405.6	405.6	2544	405.6	405.6

**Target Price Change Explanation**

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to options exercised, change order incorporations and negotiated reopener clauses.

**Cost and Schedule Variance Explanations**

Cost and Schedule Variance reporting is not required on this (FPIF/CPFF) contract.

**General Contract Variance Explanation**

Cost and Schedule Variance are not reported for this contract because an EVM Waiver and Class Deviation was approved by the Army Acquisition Executive on December 6, 2015, for all FPIF FRP contracts subsequent to FRP Lot 1.

**Notes**

The contract was executed May 19, 2016, as an undefinitized contract action change order in the Not-To-Exceed (NTE) amount of \$331.7M. The NTE was awarded for GMLRS AW and Low Cost, Reduced Range Practice Rocket (LCRRPR) requirements for the Army, U.S. Marine Corps, Finland, Israel, Jordan and Singapore. The NTE was updated on July 27, 2016, to the amount of \$321.4M. Definitization was December 1, 2017, to include an additional 240 GMLRS AW rockets and 1,944 LCRRPR.

**Contract Identification**

**Appropriation:** Procurement  
**Contract Name:** GMLRS FRP XII  
**Contractor:** Lockheed Martin Missiles and Fire Control - Dallas  
**Contractor Location:** 1701 W Marshall Drive  
 Grand Prairie, TX 75051-0000  
**Contract Number:** W31P4Q-17-C-0080  
**Contract Type:** Fixed Price Incentive(Firm Target) (FPIF), Cost Plus Fixed Fee (CPFF)  
**Award Date:** May 19, 2016  
**Definitization Date:**

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
471.7	471.7	5736	471.7	471.7	5736	471.7	471.7

**Cost and Schedule Variance Explanations**

Cost and Schedule Variance reporting is not required on this (FPIF/CPFF) contract.

**General Contract Variance Explanation**

Cost and Schedule Variance are not reported for this contract because an EVM Waiver and Class Deviation was approved by the Army Acquisition Executive on December 6, 2015, for all FPIF FRP contracts subsequent to FRP Lot 1.

**Notes**

This is the first time this contract is being reported.

The contract was executed on June 15, 2017, as an undefinitized contract award in the Not-To-Exceed (NTE) amount of \$471.7M. The NTE was awarded for GMLRS AW and Unitary Rockets, plus Low Cost Reduced Range Practice Rocket requirements for the Army, U.S. Marine Corps, Germany, France, Finland and Singapore.

Definitization is scheduled for 3rd Quarter FY 2018.



## Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	376	376	420	89.52%
Production	24462	24462	96186	25.43%
Total Program Quantity Delivered	24838	24838	96606	25.71%

Expended and Appropriated (TY \$M)			
Total Acquisition Cost	16760.1	Years Appropriated	21
Expended to Date	4026.5	Percent Years Appropriated	56.76%
Percent Expended	24.02%	Appropriated to Date	5124.2
Total Funding Years	37	Percent Appropriated	30.57%

The above data is current as of February 12, 2018.

## Operating and Support Cost

### Cost Estimate Details

**Date of Estimate:** November 28, 2017  
**Source of Estimate:** POE  
**Quantity to Sustain:** 16031  
**Unit of Measure:** Rocket Pod  
**Service Life per Unit:** 10.00 Years  
**Fiscal Years in Service:** FY 2005 - FY 2045

The O&S Costs include all variants (GMLRS Dual Purpose Improved Conventional Munition (DPICM), Unitary, AW, Extended Range (ER) Unitary and ER AW). The rocket pod refers to the Launch Pod Container that consists of six guided rockets with an expected service life of ten years and procurement of 16,031 rocket pods (total of 96,186 rockets). The 420 RDT&E rockets are test articles and will be consumed.

### Sustainment Strategy

The Sustainment Strategy is two-level maintenance - Field and Sustainment. An organic depot capability was established for GMLRS DPICM and Unitary variants in 2nd Quarter FY 2009. This capability was upgraded to incorporate GMLRS AW in 3rd Quarter FY 2016.

### Antecedent Information

No Antecedent

Annual O&S Costs BY2003 \$K		
Cost Element	GMLRS/ GMLRS AW Average Annual Cost Per Rocket Pod	No Antecedent (Antecedent)
Unit-Level Manpower	0.000	--
Unit Operations	0.033	--
Maintenance	0.793	--
Sustaining Support	1.879	--
Continuing System Improvements	0.051	--
Indirect Support	0.000	--
Other	0.000	--
Total	2.756	--

The Cost Element Sustaining Support includes Missile Stockpile Reliability Certification, base operations, second destination transportation, System Engineering Program Management and training. The Continuing System Improvements consists of software maintenance.



Item	Total O&S Cost \$M			
	GMLRS/ GMLRS AW			No Antecedent (Antecedent)
	Current Production APB Objective/Threshold		Current Estimate	
<b>Base Year</b>	204.8	225.3	<b>441.8'</b>	N/A
<b>Then Year</b>	337.0	N/A	724.6	N/A

<sup>1</sup> APB O&S Cost Breach

The O&S Cost breach is due to increased quantities from 43,560 to 96,186 to support the Total Army Munitions Requirements.

#### Equation to Translate Annual Cost to Total Cost

Total O&S Cost = Average Annual Cost per Rocket Pod x Number of Rocket Pods x Life per Rocket Pod = \$2.756K x 16,031 Rocket Pods x 10 Years = \$441.8 (BY 2003 \$M)

O&S Cost Variance		
Category	BY 2003 \$M	Change Explanations
Prior SAR Total O&S Estimates - Dec 2016 SAR	205.5	
Programmatic/Planning Factors	236.3	Total Rocket Pod quantity increase from 7,260 to 16,031 rocket pods
Cost Estimating Methodology	0.0	
Cost Data Update	0.0	
Labor Rate	0.0	
Energy Rate	0.0	
Technical Input	0.0	
Other	0.0	
Total Changes	236.3	
Current Estimate	441.8	

#### Disposal Estimate Details

**Date of Estimate:** November 28, 2017  
**Source of Estimate:** POE  
**Disposal/Demilitarization Total Cost (BY 2003 \$M):** Total costs for disposal of all Rocket Pod are 91.9